Original Report

Knowledge of Reproductive Health and Perception of Violence Among Rural Schoolgirls in Egypt

Nesreen Mohamed Kamal Elden MD, Walaa Ahmed Khairy MD *, Eman Hany Elsebaei MD

Public Health Department, Faculty of Medicine, Cairo University, Cairo, Egypt

A B S T R A C T

Study Objective: Although schools should play a crucial role in providing the right health information at the right age, little is known about the knowledge of school pupils in Egypt, especially girls living in rural areas, regarding reproductive health, and their perceptions of violence. In this study we aimed to assess reproductive health knowledge and perceptions around violence among rural school-attending girls.

Design, Setting, and Participants: A descriptive cross-sectional study was conducted in 3 randomly selected public schools in a rural district in Fayoum Governorate. An anonymous, self-administered questionnaire was collected from a random sample of 412 schoolgirls between May and June 2017.

Interventions and Main Outcome Measures: A reproductive health knowledge score was generated by summing the correct responses to 28 items related to puberty, reproductive health problems, and marriage. The participants' scores were dichotomized as high reproductive health knowledge if they scored at 50% or higher correct and low knowledge if they scored less than 50%.

Results: More than two-thirds of the participants had low reproductive health knowledge. The mean (SD) of the reproductive health knowledge score was 12.5 (±4.7) of 28. Multivariable regression analysis indicated that participants' age (adjusted odds ratio, 1.6; 95% confidence interval, 1.2-2.0) and their fathers' education (adjusted odds ratio, 1.4; 95% confidence interval, 0.5-3.8) predicted high reproductive health knowledge. Regarding the perception of violence, approximately 31% of the participants accepted physical punishment from parents.

Conclusion: Schoolgirls in rural areas are still ignorant about many reproductive health issues and are subjected to different forms of violence, which necessitates development of reproductive health awareness programs with engagement of parents and teachers.

Key Words: Adolescents, Egypt, Reproductive health, Puberty, Violence

Introduction

Adolescents are a critical asset of any country. The World Health Organization expert committee has defined adolescence as the period between 10 and 19 years old, the second decade of life.[1] Adolescents comprise nearly 18% of the world's total population, and of a total 1.2 billion adolescents worldwide, approximately 90% live in developing countries.[2] Adolescence is the transition from childhood to adulthood, during which a range of biological, psychological, and social changes occur. Physical changes are reflected in adolescents' appearances, voices, and sexual activity, and psychological changes in their way of thinking; social changes follow, as the individual starts thinking about their personal rights.[3]

In Egypt, young people aged 10-24 years represent 40% of the population, whereas approximately 33% of the Egyptian population are younger than the age of 15 years.[4,5] This large and ever-growing demographic faces many challenges and problems that are unique to them and that call for interventions and information designed specifically to address their needs. One of the major challenges that face the Egyptian adolescent population today is the lack of available information on reproductive health issues, which in turn affects their right to make informed choices.[6–8]

Traditional family and religious values in Egypt play an important role in the restriction of reproductive health education for youth, because most Egyptians believe that reproductive health knowledge should start with marriage.[8,9]

According to the results of the Survey of Young People in Egypt (SYPE) in 2014, approximately one-third of the respondents who had experienced menarche said that before menarche they did not know anything about menstruation (28% of urban respondents vs 37.3% of their rural counterparts). Moreover, nearly half of those surveyed did not know about sexually transmitted diseases (STDs). There was also a significant difference between urban and rural respondents in terms of their knowledge of STDs: 37.3% of urban respondents had heard of STDs, vs 50.1% of rural respondents.[4]

The growing exposure to media, especially television and social media, has played a crucial role in the current change in societal and moral values, to the extent that there has been a shift in the societal behavior standards from conservatism to liberal interaction among adolescents.[10] Adolescents find themselves sandwiched between forces of westernization, which characterizes the modern global youth culture, and firm conservatism at home, which sternly forbids discussion about sex. This dichotomy creates the potential for the spread of misinformation and aggravates confusion among adolescents.[11,12]

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* *Address correspondence to:* Walaa Ahmed Khairy, MD, Public Health Department, Faculty of Medicine, Cairo University, Kasr Al Ainy Street, 11562 Cairo, Egypt; Phone: (20) 1223682081

E-mail address: wallaakhairy@yahoo.com (W.A. Khairy).

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Another important problem that adolescents in Egypt face is exposure to violence.[13] According to a study conducted by the National Council for Childhood and Motherhood and UNICEF in 3 governorates, many children are being subjected to violence at the hands of those who are supposed to nurture and protect them. Two-thirds of the children surveyed had been victims of physical violence in the year preceding the survey, whereas 78% were victims of emotional violence.[14]

International consensus asserts that adolescents need and have a right to reproductive health information and services.[8,15,16] In this context, schools have a crucial role in providing basic reproductive health information related to the physiological changes that take place during puberty, to STDs, reproductive health problems, and the ideal age of marriage, especially for girls in rural areas where social and cultural norms, as well as long-standing taboos, restrict discussion of such issues before marriage.[8,16,17] Using schools to transmit this information is also a cost-effective way to reach youngsters, because most adolescents are enrolled in school.[8,18] Moreover, surveys have revealed that adolescents and their parents demand more information on such issues be provided at school.[19] Another important right for adolescents is to be safeguarded against all forms of violence, which unfortunately might be tolerated in rural communities as a form of discipline.[14]

Searching the literature revealed little evidence, if any, about Egyptian school pupils' knowledge of reproductive health and their perception of violence, and especially little about girls living in rural areas. Most studies to date have focused exclusively on university students,[6,7] thus ignoring a large segment of adolescents, and rural girls, many of whom do not obtain a university education because of early marriage commitments, a problem compounded by a lack of reproductive health knowledge.[4,20,21] In this study we aimed to remedy this by assessing reproductive health knowledge and perceptions of violence among rural schoolgirls, and thus provide an insight into the magnitude and pattern of different types of violence against children in rural Egypt, as well as the perceptions of children themselves around this issue.

Materials and Methods

Design

This descriptive cross-sectional study was designed to explore knowledge and perceptions of violence among schoolgirls enrolled in 3 randomly selected public preparatory and secondary schools in a rural district in Fayoum Governorate between May and June 2017. In Egypt, the Arabic term meaning "rural" is used interchangeably with "village" and accordingly a rural area is defined as an area in which most households obtain a share of their income from agricultural work, although other sources might be more essential.[22]

Setting, Sampling, and Participants

This study was conducted in 3 schools in the Tamia district in Fayoum Governorate, Egypt, that are affiliated with the Egyptian Ministry of Education. Tamia is a rural district that has 2 types of public schools. The first type are primary schools with male and female students from grade 1 to grade 6. The other type are combined preparatory and secondary schools from grade 7 to grade 12, which are subdivided into male and female schools (n = 8 and 6 schools, respectively).The study used a multistage random sampling technique: first, 3 of 6 female preparatory and secondary schools were selected using simple random sampling, with approximately 900 students were registered in each school. Then, stratification was considered from grade 7 to 12. This was followed by using a systematic random sampling technique to select students from each class. The sample size was proportionally allocated to each grade according to their corresponding number of students. All rural adolescent girls who had been enrolled in preparatory and secondary school for a minimum of 12 months were eligible.

The sample size was estimated to determine an expected satisfactory knowledge rate among adolescent girls of 50% or more, with 5% absolute precision and 95% level of confidence. The estimated sample size is 384; after adjustment for nonresponse, the sample size was increased to 412 students.

Measures

A self-administered questionnaire (Supplemental File 1) was adapted from a questionnaire used to study the baseline knowledge, attitudes, and practices toward sexual and reproductive health rights of children and adolescents in Lebanon and Yemen.[23] The questionnaire was pilot-tested in Fayoum on a group of 20 schoolgirls. During data collection, 3 field coordinators were assigned to screen the completed questionnaire before submission by each student, to guarantee quality control and avoid missing data.

The questionnaire consisted of a series of questions targeting the following areas:

- Demographic characteristics: participant age and parents' education;
- Puberty: girls' and boys' physiological changes during puberty, and puberty problems, in addition to sources of information on these topics;
- STDs and reproductive health problems: had the participant ever heard about STDs and different types of reproductive health problems, and sources of information on these topics;
- Age of marriage: ideal age of marriage for boys and girls;
- Violence: parental fights, attitudes toward violence from parents and teachers, and parents' violence at home.

The study measured reproductive health knowledge related to puberty (8 questions on the physiological changes in girls' and boys' bodies during puberty, and 7 questions on the problems that adolescents face during puberty), reproductive health problems (5 questions on reproductive health problems, 2 questions on STDs), and marriage (2 questions on the ideal age of marriage for girls and boys, 2

questions on the legal age of marriage for girls and boys, 2 questions on problems of early marriage for boys and girls). Correct responses to knowledge questions are presented in Table 1. A reproductive health score was generated by summing the correct responses to 28 items, for which 1 point was allocated for each correct answer, allowing for a score ranging from 0 to 28. Additionally, the participants' scores were dichotomized as high and low reproductive health knowledge if they scored 50% or more correct or less than 50%, respectively. The 50% cutoff point was used because it approximated the median score, and to study the broad spectrum of knowledge among the respondents.[24–27] Also, students' attitudes toward violence were explored.

Statistical Analyses

An electronic database for the responses obtained from the questionnaires was built using Epi-Info 3.5.3 (Centers for Disease Control and Prevention [CDC]), and the data entry for each questionnaire was performed twice by N.M.K.E. and W.A.K. to ensure accuracy in data recording. All of the statistical analyses were carried out using the Statistical Package for the Social Sciences version 17 (SPSS Inc). The internal consistency (reliability) among the items was tested and Cronbach α was determined to be 0.83. A descriptive analysis was executed for each variable. The mean of the knowledge score was calculated. An independent Student *t* test was used to compare the mean knowledge score according to the mother's education. The Pearson χ^2 test was performed to calculate the crude association of the independent variables with the knowledge variable. Finally, variables that showed a significant association with the dependent variable in the bivariate analysis were entered into a multivariate logistic regression model to identify their independent effects. *P* value and 95% confidence interval (CI) for odds ratio (OR) were used in judging the significance of the association.

Ethical Considerations

Before the study, all of the required administrative approvals were obtained from the Ministry of Education. The vice principals of the 3 schools were contacted and informed about the objectives of the study. They informed and reminded the students that participation was voluntary, and that they could withdraw from the study at any

Table 1
Correct Answers and Allocated Scores to the Reproductive Knowledge Questions on the Study Questionnaire

Knowledge Section	Knowledge Question	Answer Items	Correct Answer	Allocated Scores (Total Score = 28)
Pubertal Knowledge	What are the physical changes that occur to girls during puberty?*	a) Breasts start to grow b) Hair growth (genital/underarms) c) Height and weight increase d) Menstruation starts	a, b, c, d	4
	What are the physical changes that occur to boys during puberty?*	a) Voice changes (hoarse voice) b) Height and weight increase c) Body becomes more muscled/strong d) Changes in sex organs	a, b, c, d	4
	What are the problems or worries that a person faces during puberty?*	a) No problems or worries b) Abdominal cramps c) Feeling fatigued/tired d) Eating too much e) Get sad/depressed f) Irritability/anger g) Cannot concentrate on work/study h) Shyness	b, c, d, e, f, g, h	7
STDS and Reproductive Health Knowledge	Have you ever heard of STDs?	a) Yes b) No	a	1
	Have you ever heard of a disease/illness called AIDS?	a) Yes b) No	a	1
	Do adolescents face reproductive health problems?	a) Yes b) No	a	1
	Which of the following reproductive health problems can face adolescents?*	a) Early marriage b) Sexually transmitted diseases c) Unsafe abortion d) Sexual abuse	a, b, c, d	4
Marriage Knowledge	What is the ideal age for marriage for girls?	a) ≤15 years b) 15-18 years c) ≤18 years	c	1
	Is there a legal age for marriage of girls in Egypt?	a) Yes b) No	a	1
	If a girl gets married before the age of 18, does she face any problems?	a) Yes b) No	a	1
	What is the ideal age for marriage for boys?	a) ≤15 years b) 15-18 years c) ≤18 years	c	1
	Is there a legal age for marriage of boys in Egypt?	a) Yes b) No	a	1
	If a boy gets married before the age of 18, does he face any problems?	a) Yes b) No	a	1

STDs, sexually transmitted diseases.
* Multiple responses were allowed.

time. Before distributing the questionnaires to students in their classrooms, informed consent from a guardian was obtained, and then students were approached for assent to participate in the study. Respect for the participants, their informed consent/assent, maintaining confidentiality, and the participants' right to withdraw at any time were considered throughout the study, according to the Declaration of Helsinki.

Results

A total of 412 students completed the questionnaire. The participants were aged between 10 and 17, with a mean age of 15 (SD 1.69) years. More than one-third of the students' fathers had a university education and nearly the same proportion had a primary or secondary level education. Approximately one-third of the students' mothers had not received any formal education, whereas more than one-quarter of the mothers had received secondary education, and one-fifth were university graduates (Table 2).

Table 2
Demographic Characteristics of the Studied Group (N = 412)

Item	Value (Total = 412)
Fathers' Education	
Not Educated	68 (16.5)
Read/Write	38 (9.2)
Primary/Preparatory	63 (15.3)
Secondary	93 (22.6)
University	150 (36.4)
Mothers' Education	
Not Educated	133 (32.2)
Read/Write	38 (9.2)
Primary/Preparatory	41 (10.0)
Secondary	115 (27.9)
University	85 (20.7)
Mean Age ± SD, years	15 ± 1.69

Data are presented as n (%) except where otherwise posted.

Reproductive Health Knowledge

Table 3 shows the reproductive health knowledge items divided into 3 sections: knowledge about puberty, knowledge about STDs and reproductive health problems, and knowledge about marriage. Regarding pubertal knowledge, more than 40% of the participants identified 2 physiological changes that happen to girls during puberty, namely breast changes and menstruation. Approximately half of the participants identified voice changes as a physiological change for boys during puberty. The responses to the item about puberty problems revealed that fatigue (30.8%) and shyness (25.5%) were the most commonly reported problems; whereas nearly 9% of participants did not identify any problems during the puberty stage.

As to knowledge of STDs and reproductive health problems, on being asked whether they had heard about STDs and HIV, half of the students answered in the affirmative. Fifty percent of the participants agreed that adolescents face reproductive health problems; however, less than 10% of them agreed on the possibility of adolescents' exposure to specific reproductive health problems such as unsafe abortion (7%), sexual abuse (6.1%), and STDs (5.6%).

The section concerning knowledge about marriage among the students included items related to the ideal age of marriage for girls and boys. Overall, more than 90% of the participants reported that the ideal age of marriage for boys and girls is 18 years or older.

Sources of Reproductive Health Information

The participants were asked about the different sources of information about puberty and reproductive health problems, as shown in Table 4. Regarding sources of puberty information, most of the students mentioned their mothers as a source of information (48.5%), followed by printed materials (18%), friends and relatives (13%), and teachers (7%). In contrast, students reported that their major source of information about reproductive health problems was their father (93.5%), followed by health care providers (64.5%), and mothers (32.8%), whereas the teachers' role was very limited (2.2%).

Predictors of Reproductive Health Knowledge Score

Table 5 shows the effect of the mothers' education on selected items of the students' reproductive health knowledge, in addition to the total reproductive health knowledge score. The mean reproductive health knowledge score among the participants was 12.5 (SD 4.7) out of maximum 28. Mothers' education was a significant determinant for the participants' scores on knowledge of puberty and reproductive health problems, as well as their total reproductive health knowledge score.

Only one-third of the girls (33.3%) had high perceived reproductive health knowledge (≥50% correct answers). The bivariate analysis showed that the likelihood of having reproductive health knowledge was higher in participants whose mother and father received education than those whose mother and father were not educated: (crude OR [COR], 2.5; 95% CI, 1.3-4.1) and (COR, 1.8; 95% CI, 1.1-3.5), respectively. The multivariable linear regression analysis identified the participants' age (adjusted OR, 1.6; 95% CI, 1.2-2.0) and the fathers' education (adjusted OR, 1.4; 95% CI, 0.5-3.8) as independent predictors of reproductive health knowledge (Table 6).

Perception of Violence

Table 7 presents the participants' attitude toward violence from their parents and their teachers. More than 30% of the participants believed physical punishment from parents was acceptable, whereas approximately 18% of the participants also accepted humiliating punishment from parents and physical punishment from teachers.

When the participants were asked about their experience of violence in their homes during the month before the survey, approximately 35%, 33%, and 27% of the participants reported that they were beaten, threatened, or deprived of something, respectively (Fig. 1). Moreover, approximately 60% of the participants witnessed their parents fighting at home (Fig. 2).

Table 3
Reproductive Health Knowledge Among the Studied Group (N = 412)

Knowledge Section	Knowledge Item	N (%)
Pubertal Knowledge	Girls' physiological changes during puberty*	177 (43)
	Breast changes	106 (25.7)
	Hair growth (pubic area and axilla)	118 (28.6)
	Increase in weight and height	169 (41)
	Menstruation	
	Boys' physiological changes during puberty*	
	Voice changes	204 (49.5)
	Increase in weight and height	121 (29.3)
	Muscular growth	127 (30.8)
	Changes in sex organs	113 (27.4)
	Puberty problems*	
	Abdominal cramps	51 (12.4)
	Fatigue	127 (30.8)
	Increase appetite	54 (13.1)
	Depression	78 (18.9)
	Angry	87 (21.1)
	Difficult concentration	81 (19.7)
	Shy	105 (25.5)
	None	38 (9.2)
STDs and Reproductive Health Problems Knowledge	Ever heard of STDs	
	Yes	208 (50.5)
	Ever heard of AIDS	
	Yes	208 (50.5)
	Adolescent faces any reproductive health problems	
	Yes	207 (50.2)
	Type of reproductive health problems that adolescents face*	
	Early marriage	47 (11.4)
	STDs	23 (5.6)
	Unsafe abortion	29 (7)
	Sexual abuse	25 (6.1)
Marriage Knowledge	Ideal age for girls' marriage	
	≤15 years	6 (1.5)
	15-18 years	24 (5.8)
	≤18 years	382 (92.7)
	Presence of legal age for marriage of girls	
	Yes	201 (48.8)
	Girls face problems if married younger than 18 years	
	Yes	347 (84.2)
	Ideal age for boys' marriage	
	≤15 years	4 (1)
	15-18 years	13 (3.2)
	≤18 years	395 (95.8)
	Presence of legal age for marriage of boys	
	Yes	284 (68.9)
	Boys face problems if married younger than 18 years	
	Yes	259 (62.8)

STD, sexually transmitted disease.
* Multiple responses were allowed.

Discussion

Approximately two-thirds of survey respondents do not have an adequate level of reproductive health knowledge; in other words, approximately 67% of them scored less than 50% correct responses. The mean of the total reproductive health knowledge score was 12.5 (SD 4.7) of a maximum of 28. These results do not match the findings of a study conducted in Nigeria, where two-thirds of rural adolescents were knowledgeable of sexual and reproductive health

Table 4
Different Sources of Information on Puberty and Reproductive Health Problems

Sources of Information*	Puberty (Total = 412), n (%)	Reproductive Health Problems (Total = 412), n (%)
Mother	200 (48.5)	135 (32.8)
Father	9 (2.2)	385 (93.5)
Brother/Sister	16 (3.8)	9 (2.2)
Friend/Relatives	54 (13)	65 (15.8)
Teachers	29 (7.03)	9 (2.2)
Health Care Providers	27 (6.5)	265 (64.5)
Social Workers	3 (0.8)	7 (1.7)
Printed Material	74 (18)	12 (2.9)
Radio/TV	5 (1.3)	11 (2.7)
Internet	13 (3.2)	27 (6.6)

* Multiple responses were allowed.

Table 5
Effect of Mothers' Education on Reproductive Health Knowledge Score of the Studied Group

Tested Knowledge Score	Mothers' Education			P*
	Total (N = 412), Mean ± SD	Received Formal Education (n = 241), Mean ± SD	Did Not Receive Formal Education (n = 171), Mean ± SD	
Score for knowledge about girls' physiological changes during puberty	1.3 ± 1.4	1.5 ± 1.5	1.1 ± 1.3	.002
Score for knowledge about boys' physiological changes during puberty	1.3 ± 1.4	1.4 ± 1.5	1.1 ± 1.3	.02
Score for knowledge about problems during puberty	1.3 ± 1.5	1.5 ± 1.6	1.1 ± 1.2	.001
Score for knowledge about reproductive health problems that adolescent could face	0.6 ± 0.9	0.7 ± .9	0.5 ± 0.8	.02
Total score for RH knowledge	12.5 ± 4.7	13.2 ± 4.9	11.5 ± 4.2	.007

* *P* value determined using independent Student *t* test.

issues and the overall mean score of all of the domains of sexual and reproductive health assessment was 28.08 (SD 9.7) of a maximum of 48.[28]

When we asked the participants from whom they would probably receive information about puberty, approximately half of them mentioned their mothers as the main source, and only 7% reported teachers as a source of information. This situation contrasts with that reported in a survey of schoolgirls in Ethiopia, where school teachers were the major source of information about menstrual hygiene.[29] However, our results coincide with the findings of the SYPE 2009, in which 3 of 5 female respondents identified their mothers as their main source of information about puberty.[30] Additionally, previous studies in India, Ethiopia, and Nigeria gave similar results about mothers as the source of information on menses.[31–34]

The summary of mean (SD) score of knowledge about male and female puberty changes were 1.3 (±1.4) and 1.3 (±1.4) of a maximum of 4, with significantly greater knowledge among children of educated mothers than those whose mothers had not received a formal education. Those findings were lower than those from the Nigerian study, which revealed a mean of 4.41 (±1.47) of a maximum of 6 and 6.38 (±2.55) of a maximum of 9.[28]

Whereas approximately one-third of the girls are most comfortable talking to their mothers about reproductive health issues, mothers who had not received a formal education might be sources of misinformation. In this study, girls with educated mothers were more likely to have a high level of reproductive health knowledge than those with noneducated mothers (COR, 2.5; 95% CI, 1.3-4.1). This is comparable with findings from studies in Ethiopia.[29,33]

A comprehensive adolescent reproductive health program by teachers and/or a health professional can provide the right information at the right age. In the present study, the role of teachers and health care professionals as a source of information about puberty was limited. This might be because many teachers find it difficult to discuss topics related to reproduction with their students. They might also lack the skills to address the reproductive health-related problems of adolescents. Moreover, the acceptability of reproductive health education by a health professional among adolescent girls in rural areas still needs to be ascertained.[35] A series of small-scale studies in Egypt showed that students and teachers generally believe that reproductive health education should be part of the school curriculum and that parents usually prefer that their children receive reproductive health information from school teachers or health providers.[8,36] However, findings from the SYPE 2009 showed that schools do little to provide reproductive health information. The survey showed that less than 15% of boys and 5% of girls received information on puberty in school. In addition, 67% of female respondents reported that the most common reactions to menarche were shock, tears, or fear.[30]

In the same context, media has an effect on young people's knowledge and attitudes related to reproductive

Table 6
Predictors of Reproductive Health Knowledge

Variable	High Reproductive Health Knowledge (Total = 137; 33.3%)	Low Reproductive Health Knowledge (Total = 275; 66.7%)	Crude OR (95% CI)*	Adjusted OR (95% CI)†
Fathers' Education				
Received formal education	113 (82.5)	199 (72.4)	1.8 (1.1-3.5)	1.4 (0.5-3.8)
Did not receive formal education	24 (17.5)	76 (27.6)		
Mothers' education				
Received formal education	103 (87.6)	150 (8.8)	2.5 (1.3-4.1)	0.4 (0.2-0.9)
Did not receive formal education	34 (12.4)	125 (91.2)		
Age (years)‡				
Mean ± SD	15.4 ± 0.9	14.9 ± 1.2	–	1.6 (1.2-2.0)

CI, confidence interval; OR, odds ratio.
Data are presented as n (%) or mean ± SD except where otherwise noted.
* χ^2 test.
† Binary logistic regression test.
‡ *P* value = .001 (independent Student *t* test).

Table 7
Students' Attitude toward Violence

Type of Violence	n (%)
Parents need to use physical punishment to teach a child the correct behavior	128 (31.1)
Parents need to use humiliating punishment to teach a child the correct behavior	75 (18.2)
Teachers need to use physical punishment to teach a child the correct behavior	77 (18.6)
Teachers need to use humiliating punishment to teach a child the correct behavior	45 (10.7)

Total N = 412.

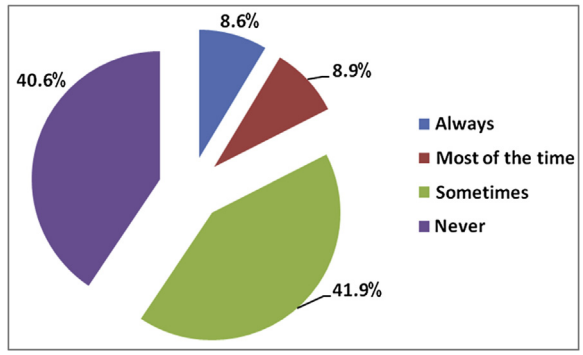

Fig. 2. Percent distribution of students according to their response to whether parents fight while the child is at home (total = 412).

health, considering that youth spend more than 7 hours per day using media such as television, computers, cell phones, and the Internet.[37] In a study conducted in Nepal, approximately 45% of adolescent girls reported that they receive information about sexual issues from TV/radio, and 64% from the Internet.[38] In the current study, only 4.5% said that TV/radio was their source of information on puberty and reproductive health issues, and 9.3% that the Internet was their source. This might be explained by the results of the SYPE 2009, which revealed that over 70% of Egyptians aged 15-29 years had never used any form of media as a source of news, and less than 10% of them had ever used the Internet. In the SYPE 2014, the percentage who had ever used the Internet as a source of news had increased to 25%.[4,30]

Most of the participants in the present study said that their fathers were their main source for reproductive health issues; moreover, fathers' education was a predictor for participants' reproductive health knowledge. A possible explanation is that girls with educated fathers could have access to reproductive health services and information, and therefore an improved perception of reproductive health issues. A study conducted in Brazil to evaluate the vulnerability of Brazilian youth to STDs and HIV/AIDS showed that having a father and/or teachers as the personal reference is a major determinant factor of knowledge, attitude, and practices among young people.[39] In a study of rural schoolchildren in Nigeria, approximately 71% and 81% of the students were aware of STDs and HIV/AIDS, respectively, whereas only approximately half of the schoolgirls in our study had ever heard

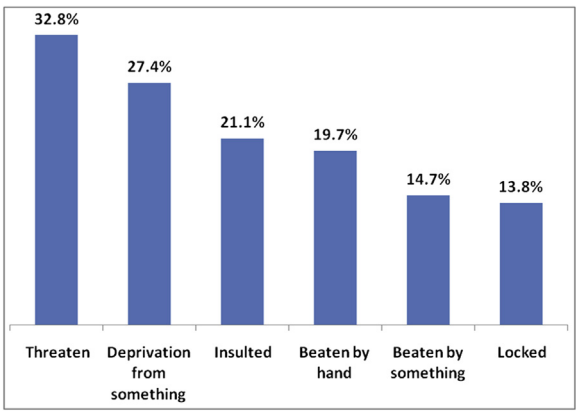

Fig. 1. Students' experience of violence at home during the month before the survey (total = 412). Multiple responses were allowed.

of STDs and HIV/AIDS, and less than 6% of them believed that an adolescent might contract a sexually transmitted infection.[28] The SYPE 2014 showed similar findings, with approximately 54.1% of the respondents having ever heard of STDs, and substantially higher numbers for boys (59.5%) than girls (48.3%).[4]

In the current study, nearly 7% of rural girls still consider early marriage to be acceptable. This finding goes in accordance with the results of Montazeri et al in Iran, where participating girls and their families had positive attitudes toward early marriage. Participants in the Iranian study believed that early marriage satisfies their social, emotional, and sexual needs, and that early marriage could bring them more independence, respect, love, and autonomy.[40] In addition, marriage allows them to satisfy their sexual needs, given that in Iranian culture, as in Egypt, extramarital sexual relations are legally and morally unacceptable.[20,40]

Despite the well known fact that violence undermines children's development, threatens family structures, harms communities' cohesion, and consumes national resources,[14] 1 in 4 girls between 15 and 19 years of age around the world has experienced physical violence.[41] The Egyptian Constitution of 2014 and the Egyptian Child Law call for children to live free from violence[14]; however, in the current study, rural schoolgirls confirmed that they were exposed to physical and emotional violence at home; approximately 35% were beaten and 20% insulted at home in the month preceding the study. Moreover, nearly 30% of the girls accepted being beaten by their parents, and 18% by their teachers. These findings are in accordance with the results of a quantitative survey and a qualitative study carried out in 3 Egyptian governorates, where approximately 61%, 65%, and 67% of Egyptian children in Cairo, Alexandria, and Assiut, respectively, were exposed to physical violence in the year preceding the survey (78% of boys vs 53% of girls). In addition, more than two-thirds of them had been exposed to verbal abuse during the past 12 months at home, with girls more likely to be verbally abused at home than boys. The focus group discussions revealed that girls believed that older family members and teachers had the right to beat them as a form of punishment, saying that it motivated them to finish their studies. Boys did not mind physical violence as well. Parents, teachers, and religious leaders also believed that physical punishment is a valid and effective form of discipline.[14]

Study Limitations

Data collected regarding sensitive topics in a school environment might be affected by multiple factors, such as participants' lack of interest or their misinterpretation of certain questions. In addition, students might have selected the answers randomly or copied each other's answers. Another limitation could be the relatively small number of participants. Additional studies are still needed, with a wider geographical scope and adequate sample sizes.

Conclusion

The present study indicates that adolescent girls in rural areas of Egypt are still ignorant about many reproductive health issues, especially the physiological changes of puberty, and STDs. Among the risk factors, age and their parents' educational status were shown to be independent predictors of reproductive health knowledge. This study also confirmed not only that many rural adolescent girls in Egypt are subjected to different forms of violence, but also that this violence is often normalized by the children themselves. There is a need for urgent action to address this attitude, which allows violence to prevail. This study highlights the importance of providing girls in rural areas with comprehensive and age-appropriate programs about reproductive health. There is also a need for public policies that promote the engagement of parents and teachers in reproductive health education programs.

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Supplementary Data

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